

PREFACE

Welcome to the investigation of Al Ain City, United Arab Emirates, urban life indicators via remote sensing and machine learning. This research explores the complex processes that shape the quality of life in urban settings, with a special emphasis on the context of Al Ain City, which is located in the center of the United Arab Emirates.

Cities are thriving centers of human activity, diversity, and invention in the modern period. However, the problems that urban landscapes face are complex, necessitating the use of sophisticated methods for evaluation and development. Conventional approaches to measuring urban quality of life frequently turn out to be laborious, time-consuming, and having a narrow focus. Sensing the need for more thorough and effective approaches, we go to the state-of-the-art technologies of remote sensing and machine learning. Thanks to the combination of machine learning and remote sensing, which can both gather precise spatial data and extract patterns and insights from enormous datasets, understanding urban life has never been possible before. This multidisciplinary approach is what we plan to use in our investigation of the different elements that go into Al Ain City's overall quality of life. We will use a variety of data sources during our expedition, such as GIS databases that define infrastructure and accessibility and satellite imagery that records land cover and environmental variables. To create useful indices of urban life, we will use machine learning algorithms on these datasets. This will shed light on the variables affecting the well-being, sustainability, and general urban experience of the inhabitants.